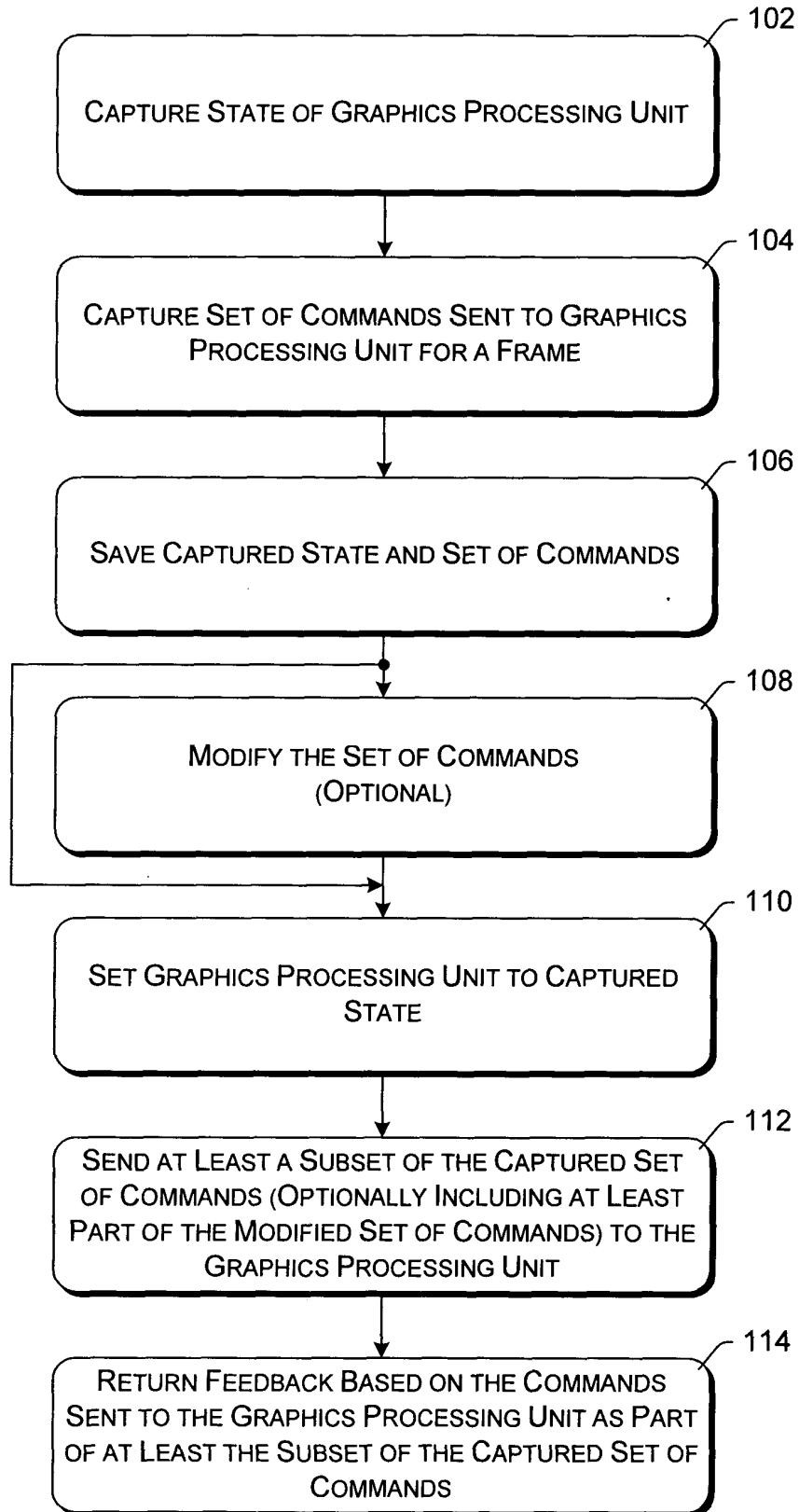


100



*Fig. 1*

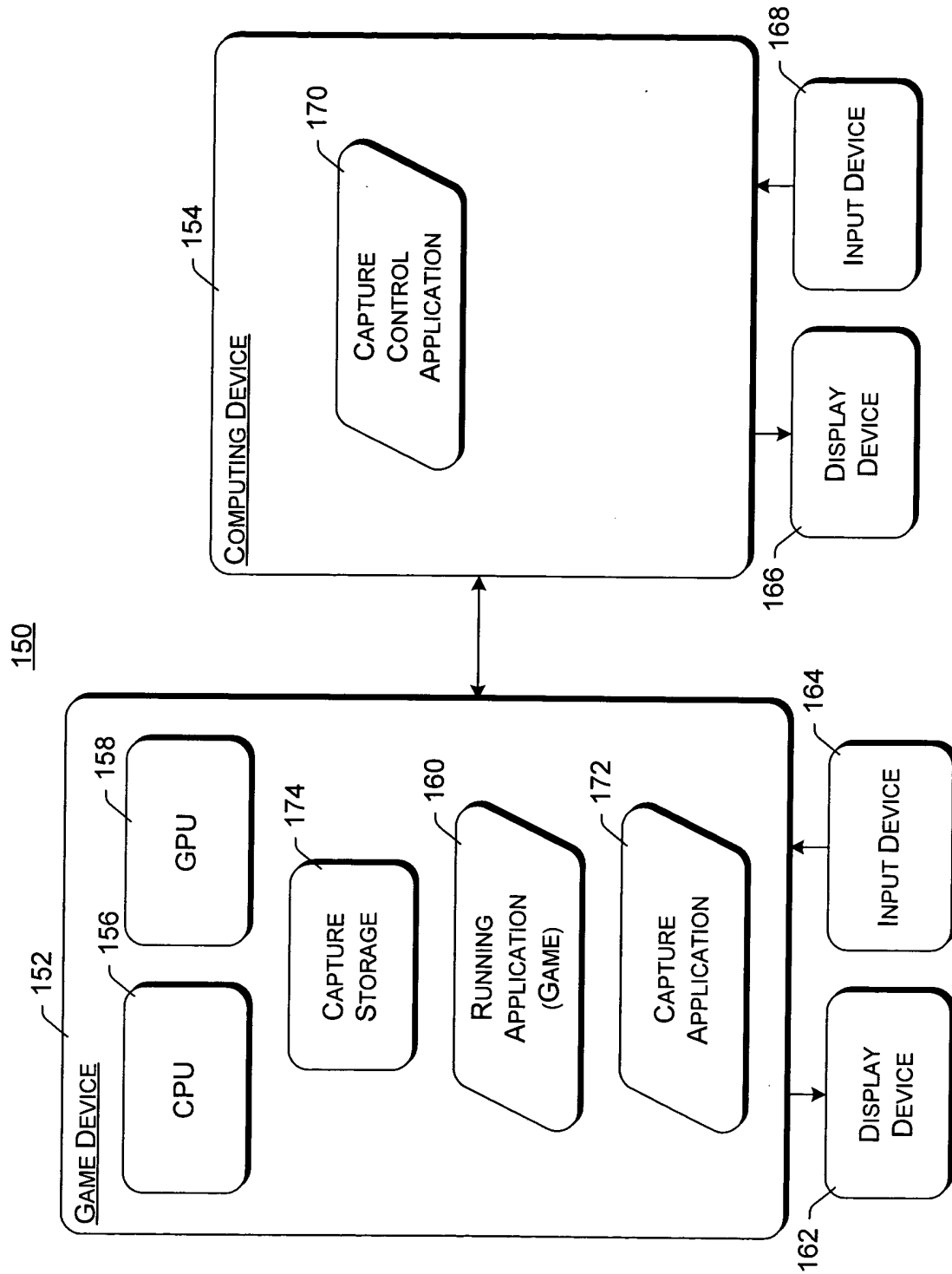
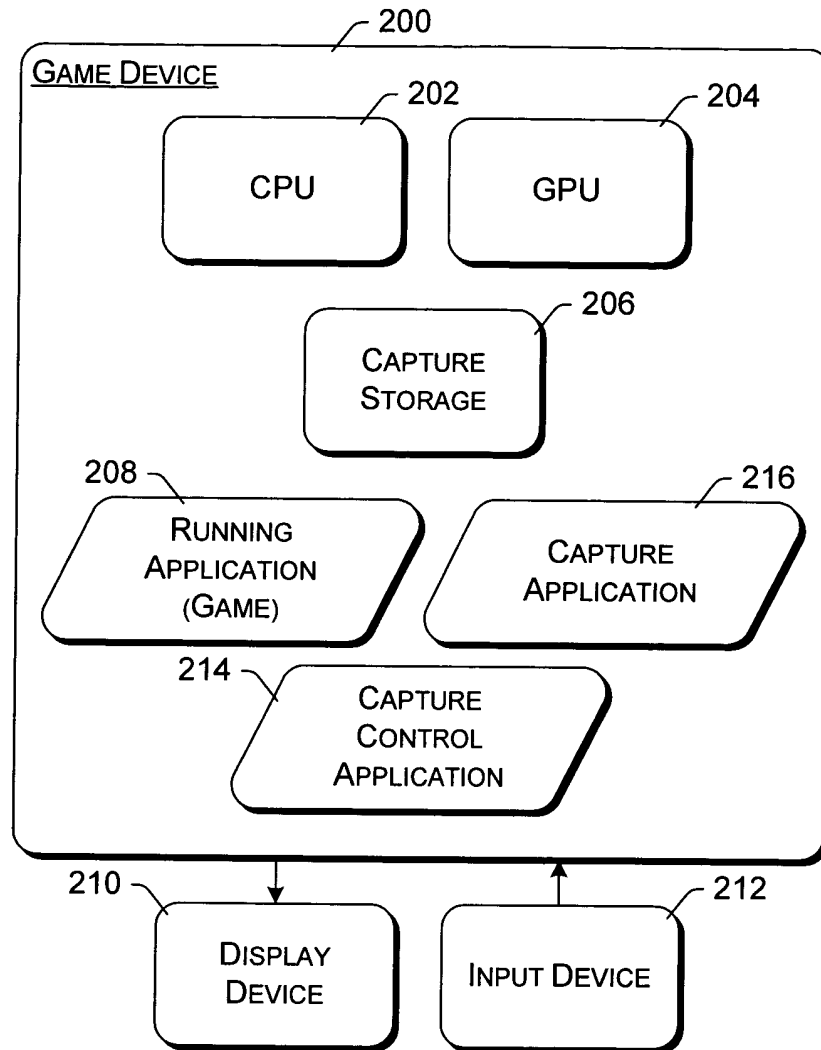


Fig. 2



*Fig. 3*

240

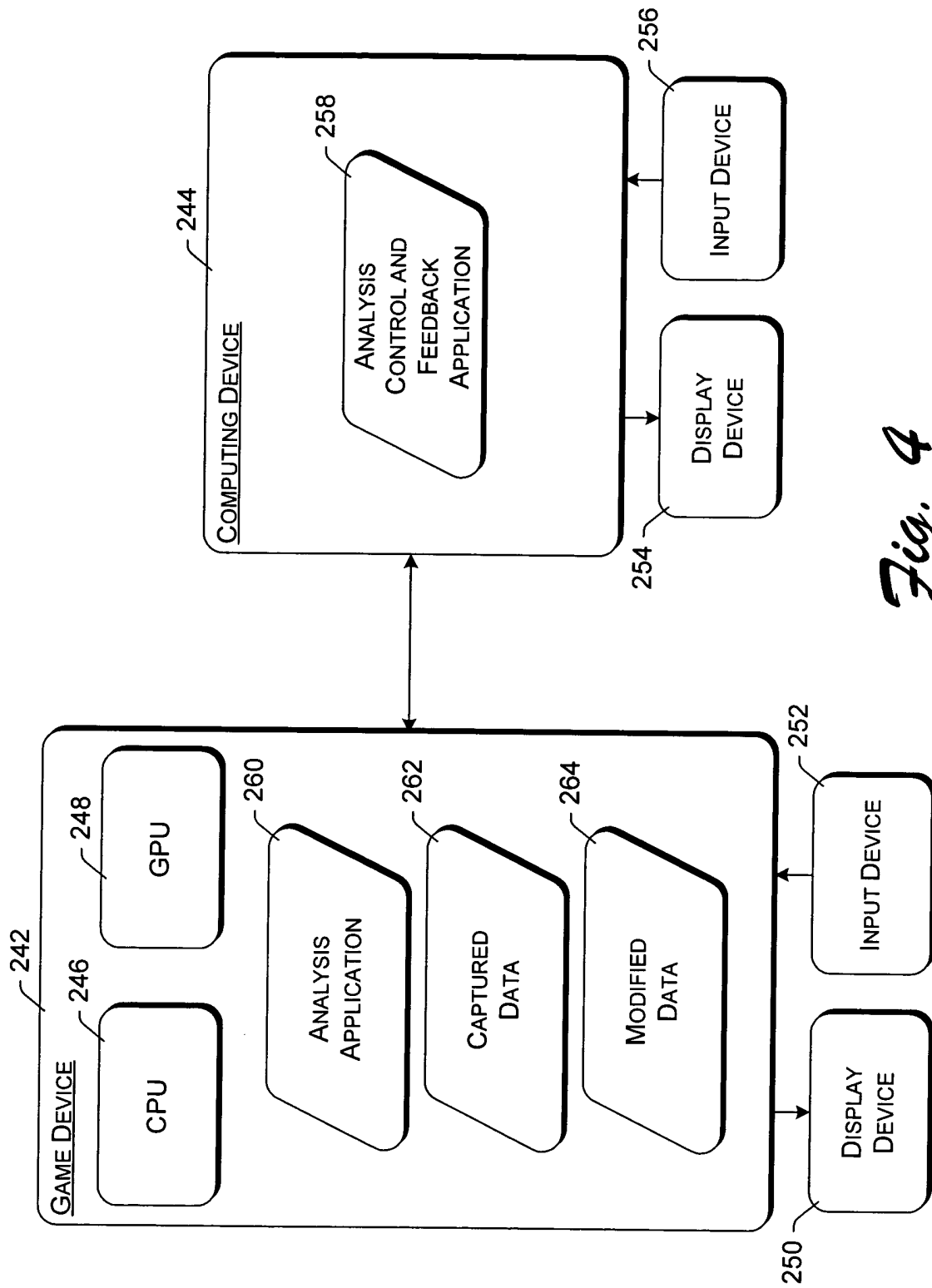
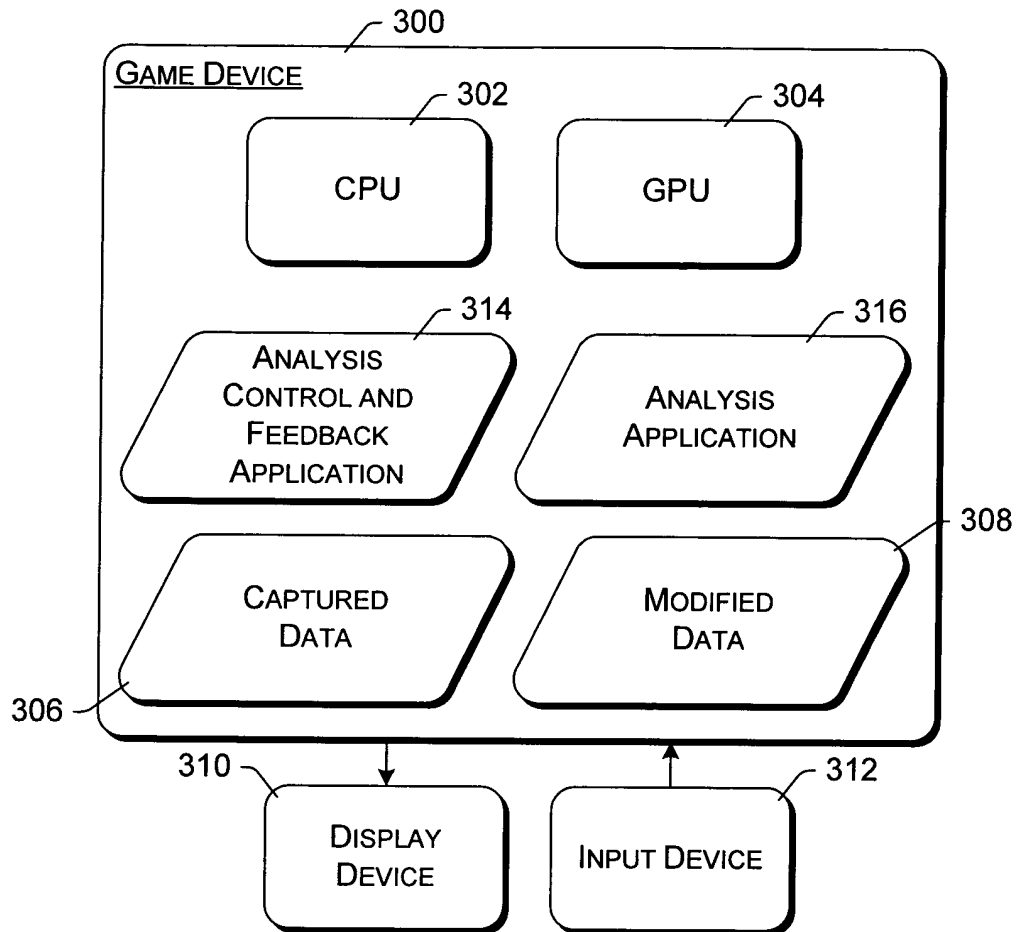


Fig. 4



*Fig. 5*

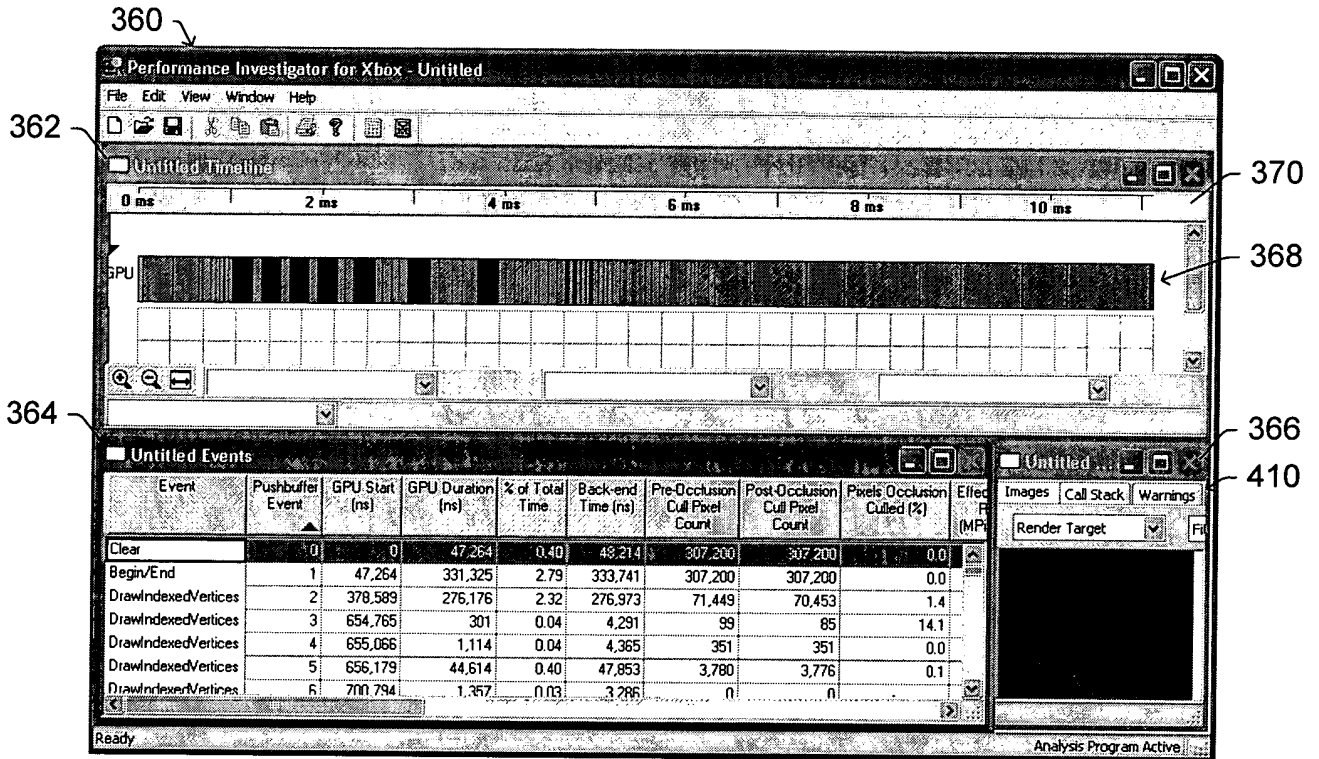


Fig. 7

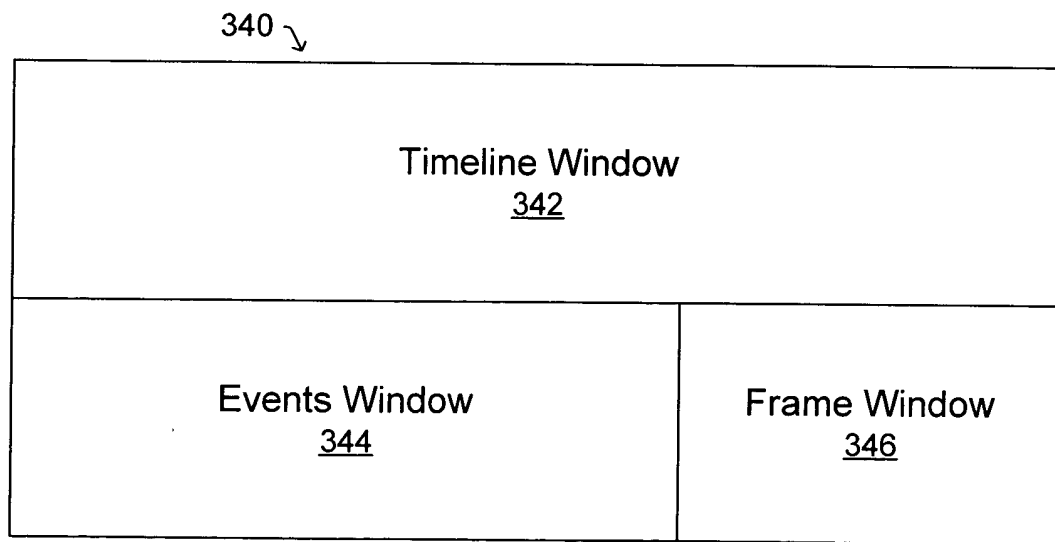


Fig. 6

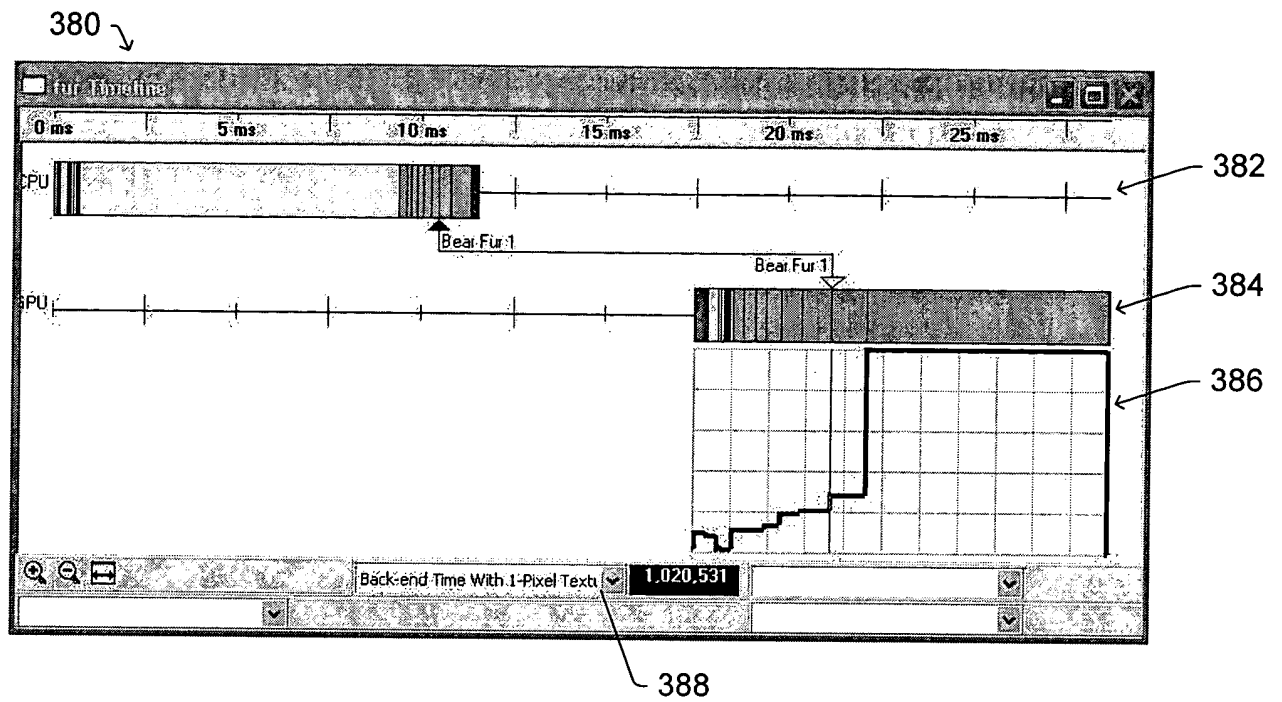


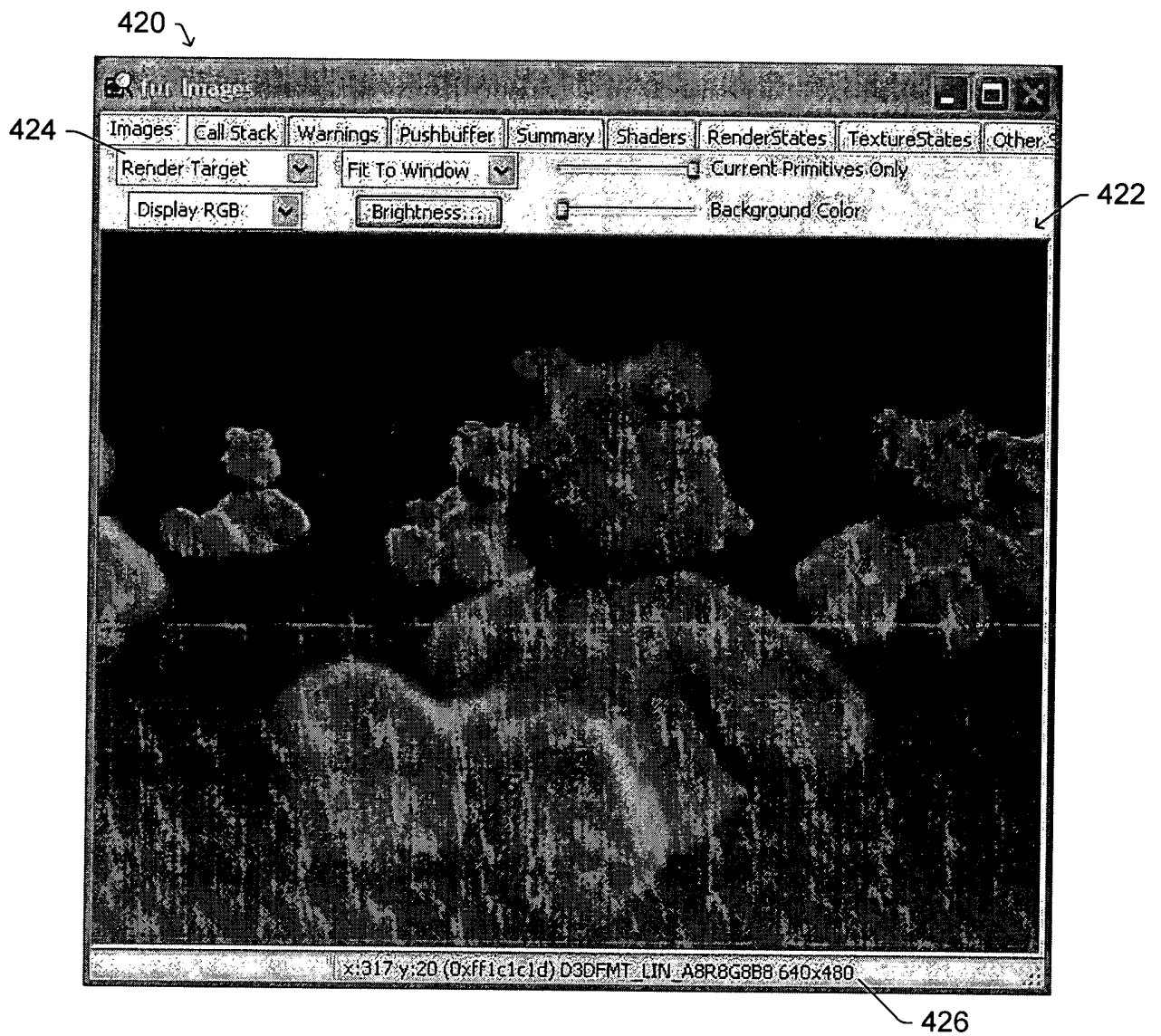
Fig. 8

400 ↘

fur Events								
Event	ID	CPU Start (ns)	CPU Duration (ns)	GPU Start (ns)	GPU Duration (ns)	% of Total Time	Back-end Time (ns)	Setup Time (ns)
KickPushBuffer	0	0	14,449	-	-	-	-	-
FrameMove	1	36,612	101,750	-	0	-	-	-
Clear	3	144,537	4,698	15,745,863	48,640	-	-	-
Begin/End	4	181,781	29,929	15,794,503	331,584	-	-	-
Bear Mesh 0								
DrawIndexedVertices	6	252,563	125,782	16,126,087	278,176	-	-	-
KickPushBuffer	7	339,091	5,501	-	-	-	-	-
KickPushBuffer	8	374,790	3,385	-	-	-	-	-
DrawIndexedVertices	9	386,209	10,399	16,404,263	3,072	-	-	-
DrawIndexedVertices	10	401,332	6,393	16,407,335	2,656	-	-	-
Bear Mesh 1	11	409,555	56,960	16,409,991	45,568	-	-	-
Bear Mesh 2	15	466,773	39,522	16,455,559	74,208	-	-	-
Bear Mesh 3	19	506,536	91,996	16,529,767	59,072	-	-	-
Bear Mesh 4	25	598,778	53,437	16,588,839	47,232	-	-	-
Bear Mesh 5	29	652,769	39,348	16,636,071	47,552	-	-	-
Bear Mesh 6	33	692,356	37,207	16,683,623	45,248	-	-	-
Bear Mesh 7	37	729,799	92,051	16,728,871	50,783	-	-	-
Bear Fur 7								
DrawFins	44	852,610	122,595	16,779,656	156,932	-	-	-
DrawShells	73	975,455	40,536	16,936,616	61,407	-	-	-
Bear Fur 6	75	1,019,798	117,933	16,998,024	219,011	-	-	-
Bear Fur 5	107	1,138,001	7,341,552	17,217,064	224,739	-	-	-
Bear Fur 4	142	8,479,990	164,020	17,441,832	284,642	-	-	-

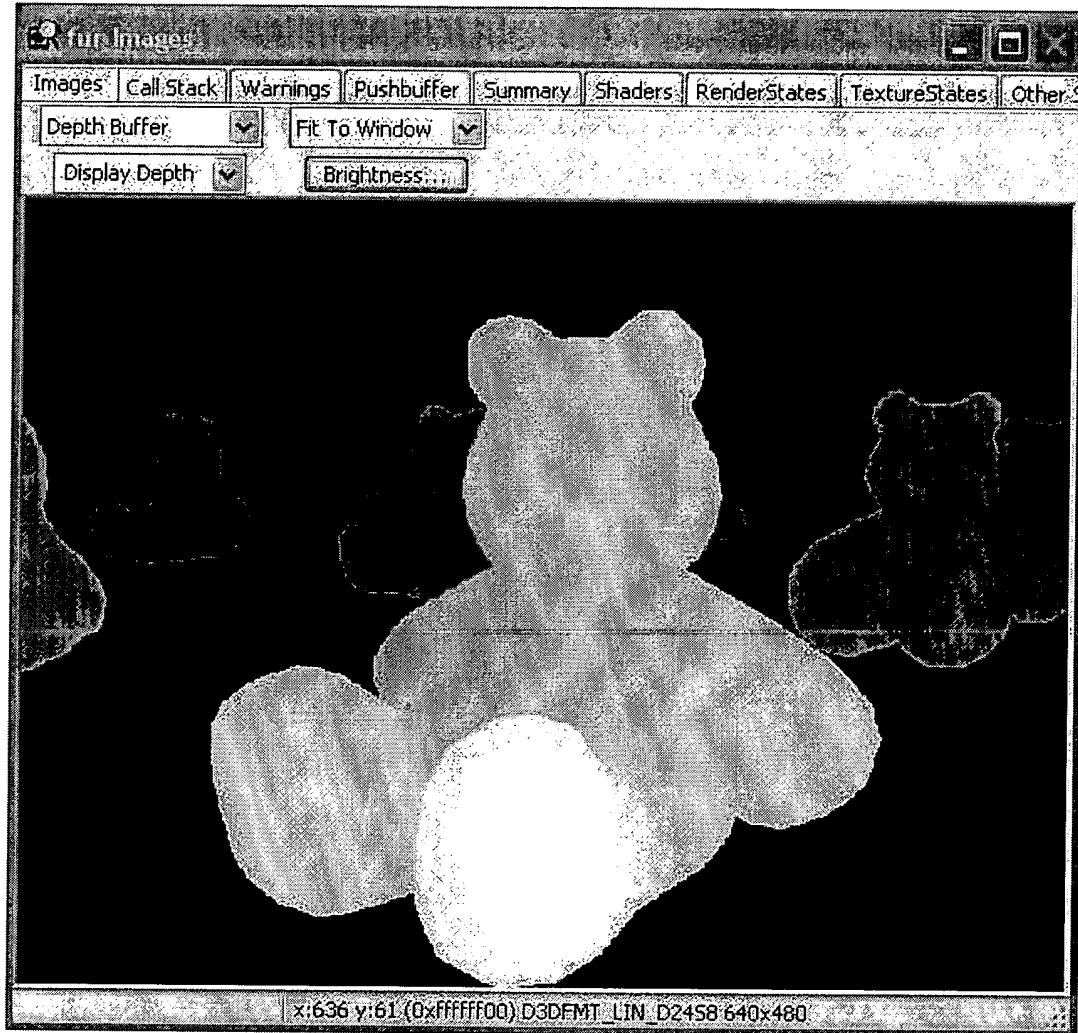
Fig. 9





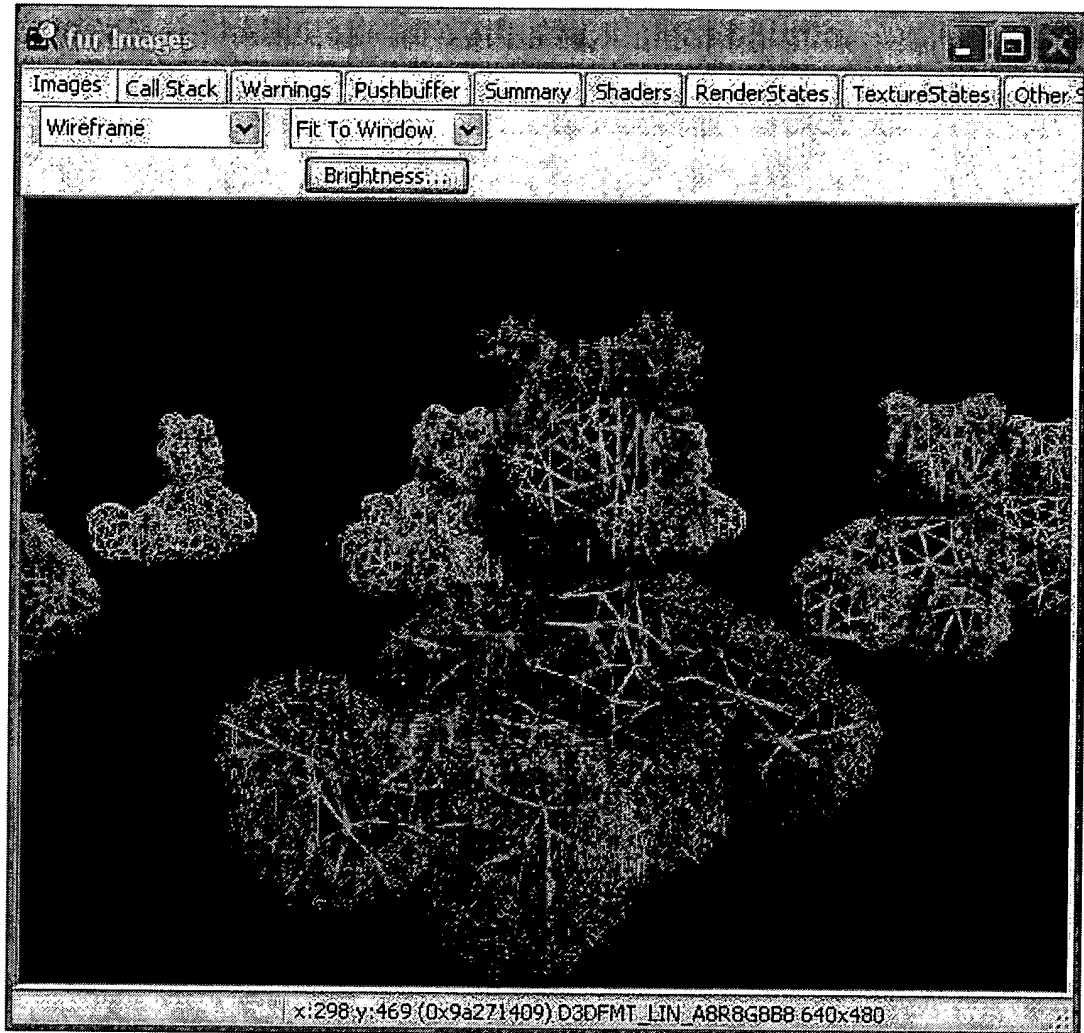
*Fig. 10*

420 ↘

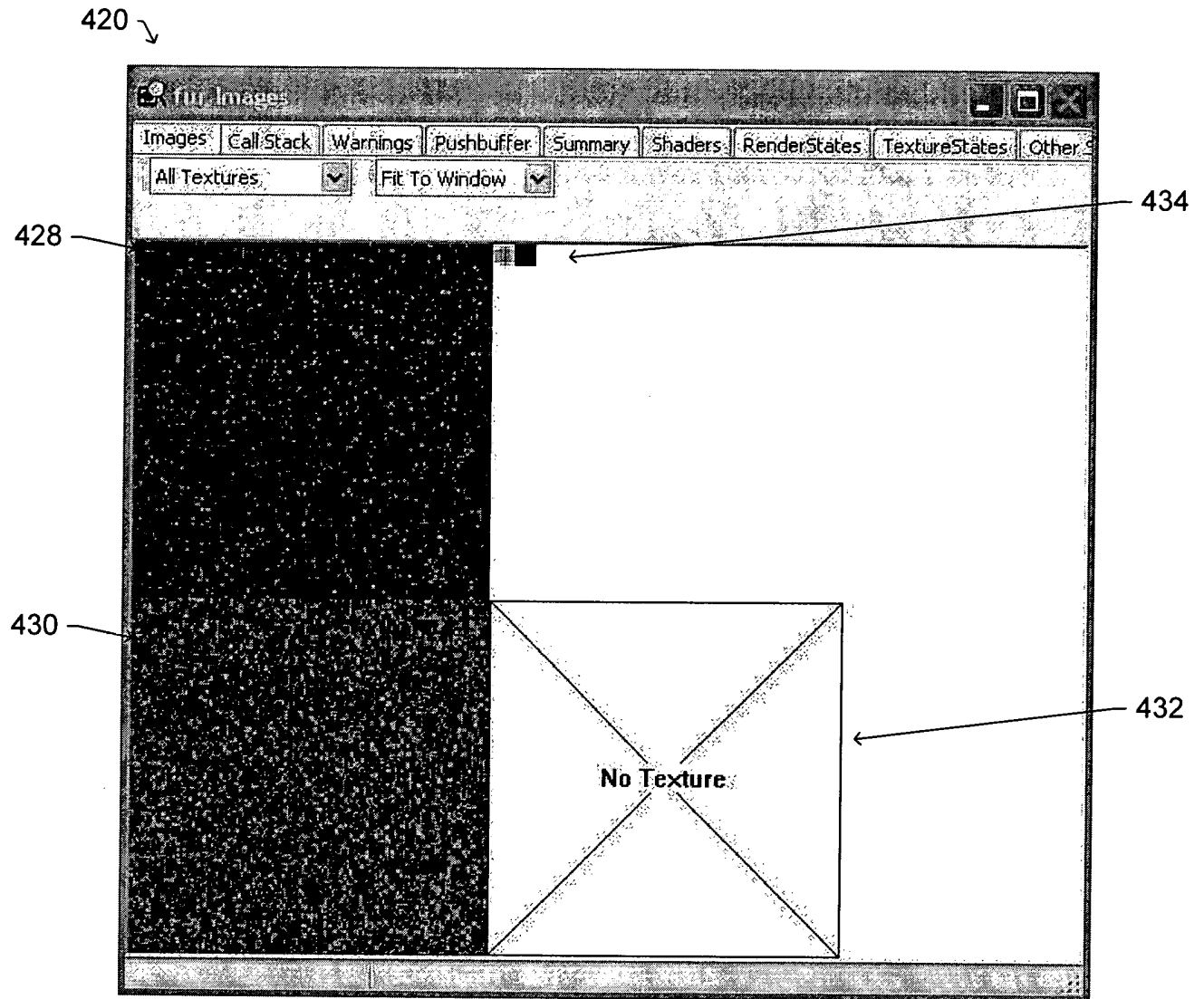


*Fig. 11*

420 ↘



*Fig. 12*



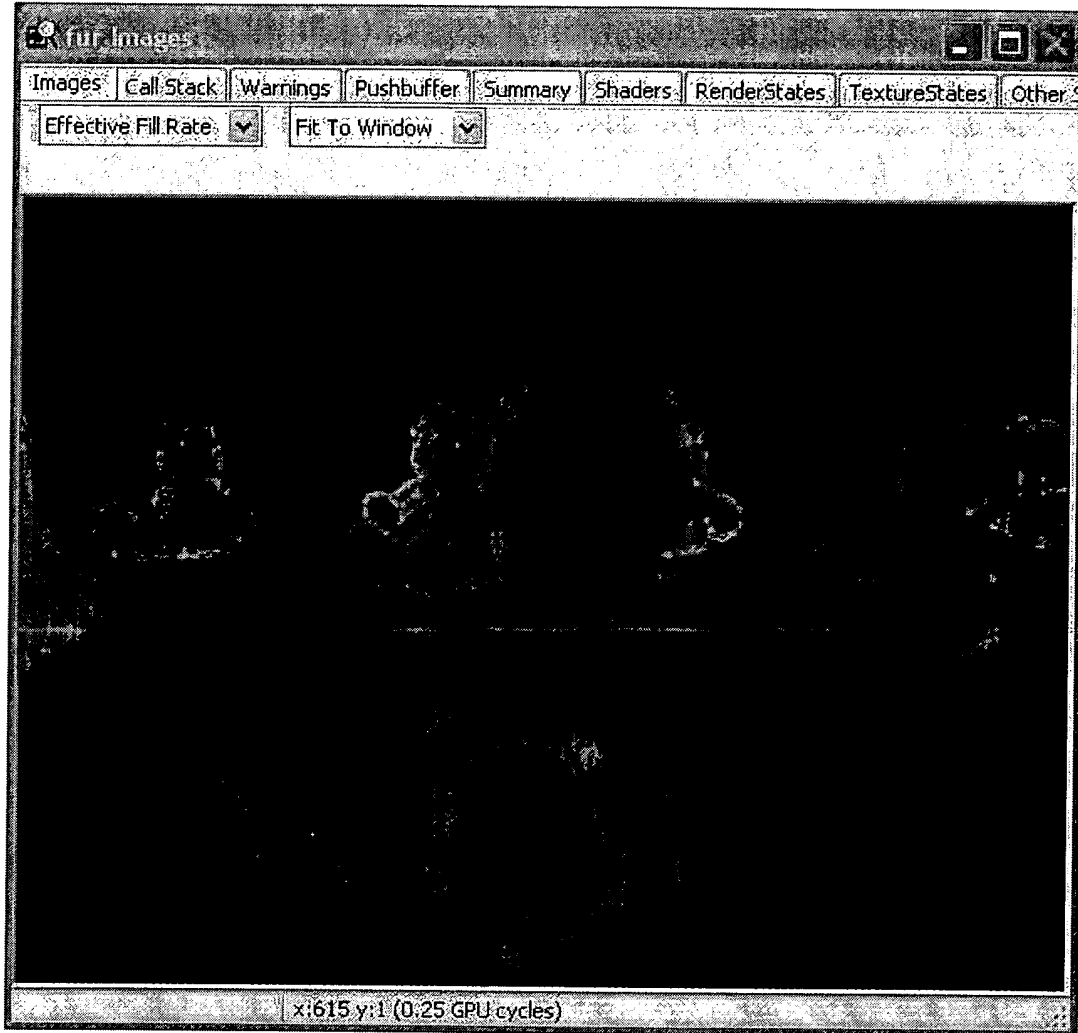
*Fig. 13*

420 ↘



*Fig. 14*

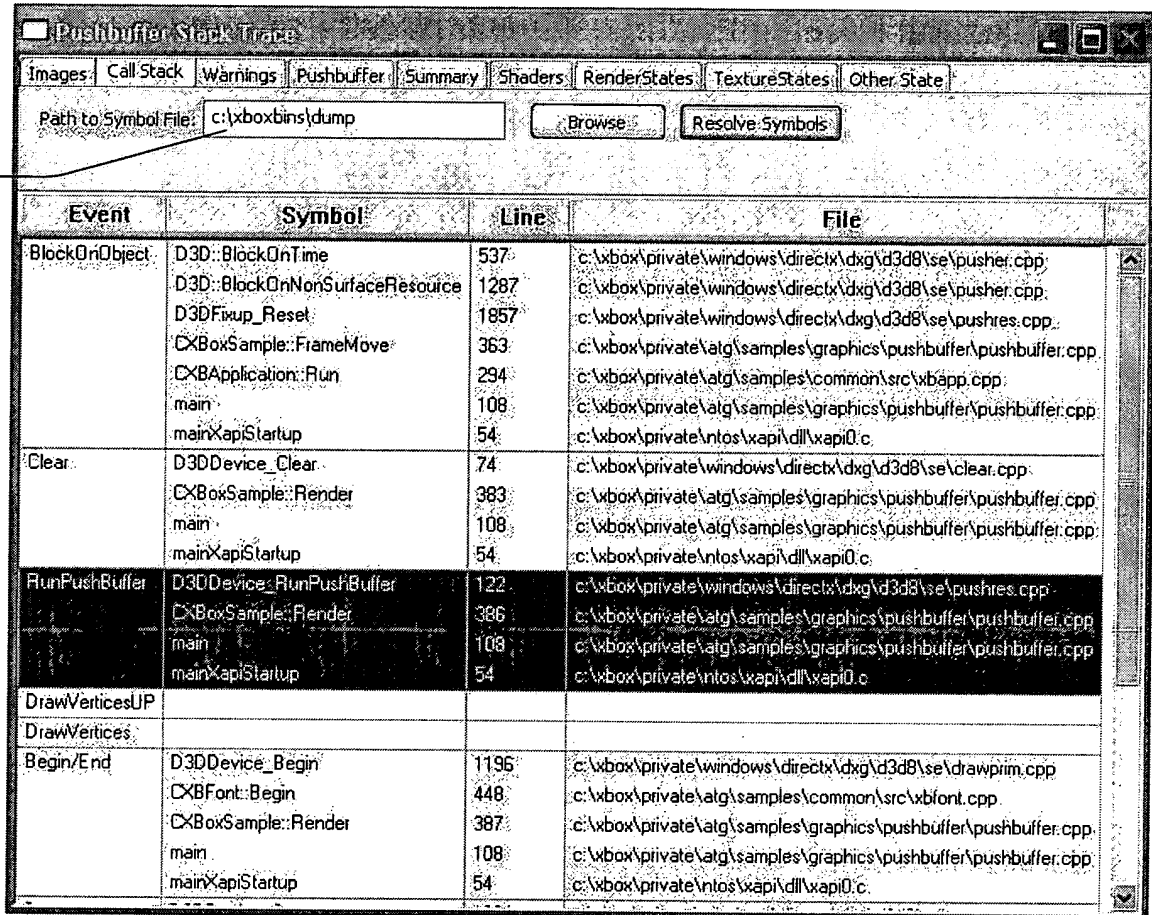
420 ↘



*Fig. 15*

450 ↘

452



Event	Symbol	Line	File
BlockOnObject	D3D::BlockOnTime	537	c:\xbox\private\windows\directx\d3d8\se\pusher.cpp
	D3D::BlockOnNonSurfaceResource	1287	c:\xbox\private\windows\directx\d3d8\se\pusher.cpp
	D3DFixup_Reset	1857	c:\xbox\private\windows\directx\d3d8\se\pushres.cpp
	CXBoxSample::FrameMove	363	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	CXBoxApplication::Run	294	c:\xbox\private\atg\samples\common\src\xbapp.cpp
	main	108	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
mainXapiStartup		54	c:\xbox\private\ntos\xapi\dl\xapi0.c
Clear	D3DDevice_Clear	74	c:\xbox\private\windows\directx\d3d8\se\clear.cpp
	CXBoxSample::Render	383	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	main	108	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	mainXapiStartup	54	c:\xbox\private\ntos\xapi\dl\xapi0.c
RunPushBuffer	D3DDevice::RunPushBuffer	122	c:\xbox\private\windows\directx\d3d8\se\pushres.cpp
	CXBoxSample::Render	386	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	main	108	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	mainXapiStartup	54	c:\xbox\private\ntos\xapi\dl\xapi0.c
DrawVerticesUP			
DrawVertices			
Begin/End	D3DDevice_Begin	1195	c:\xbox\private\windows\directx\d3d8\se\drawprim.cpp
	CXFont::Begin	448	c:\xbox\private\atg\samples\common\src\xbfont.cpp
	CXBoxSample::Render	387	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	main	108	c:\xbox\private\atg\samples\graphics\pushbuffer\pushbuffer.cpp
	mainXapiStartup	54	c:\xbox\private\ntos\xapi\dl\xapi0.c

Fig. 16

460 ↘

↗ 462

ID	Event	Priority	Message
3	Clear	3	If all redundant state setting were perfectly eliminated, rendering of entire scene would be 0.
		2	The CPU's floating point precision is set to 53 bits. Consider calling _controlfp(_PC_24, _MC_24).
4	Begin/End	3	Vertex shader is writing to 9 output registers that are unused by the current pixel shader.
		3	To make best use of pixel pipelines and swathing, use a single clipped triangle that covers the entire viewport.
74	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
106	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
138	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
173	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
206	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
210	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
243	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
247	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
280	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
282	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
284	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
288	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
321	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
325	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
329	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
333	DrawIndexedVertices	3	Vertex shader is writing to 1 output registers that are unused by the current pixel shader.
336	Begin/End	2	D3DPRESENT_INTERVAL_ONE_OR_IMMEDIATE and D3DPRESENT_INTERVAL_TWO are not supported.

Fig. 17



464 ↘

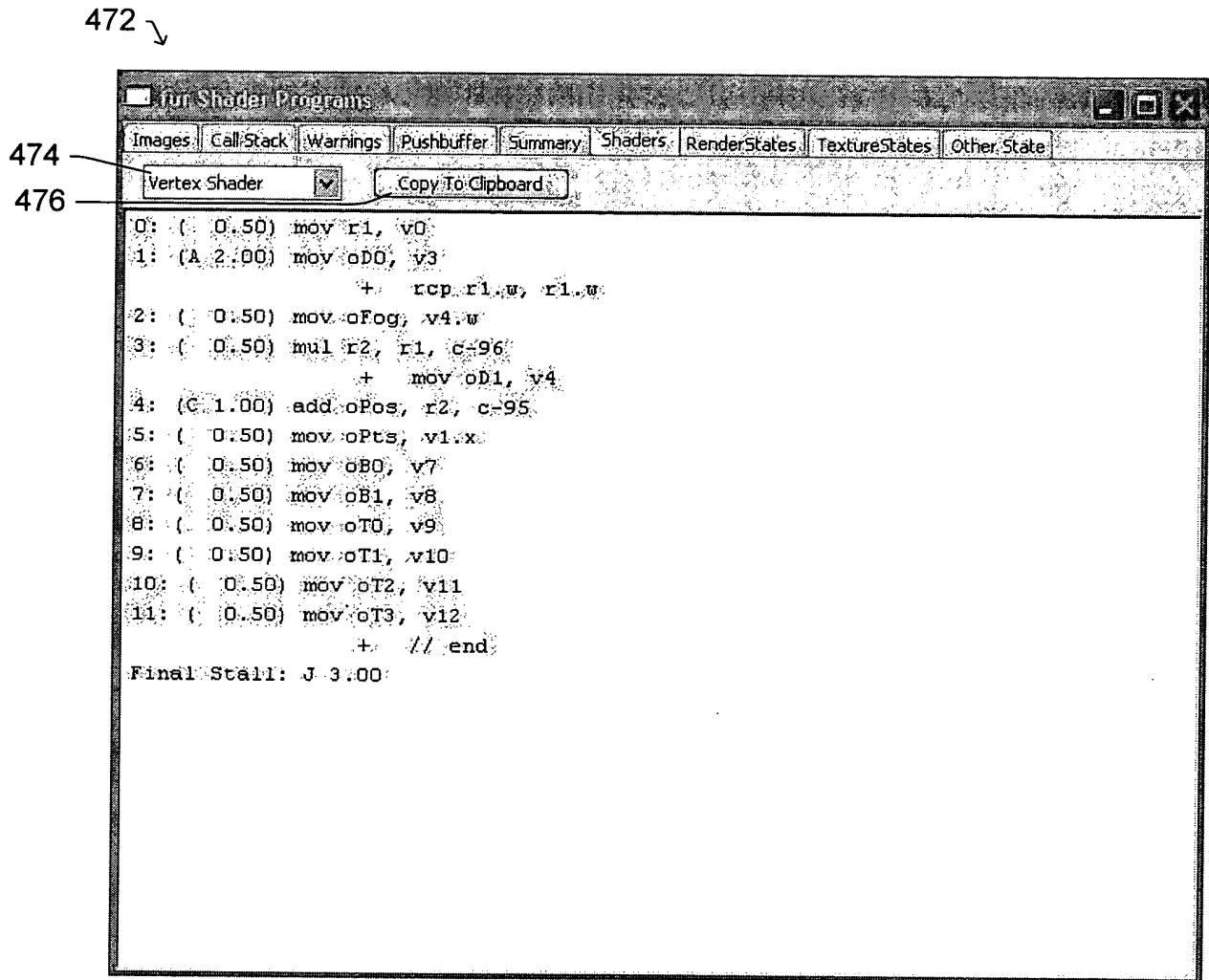
Pushbuffer Disassembly			
Images   Call Stack   Warnings   Pushbuffer   Summary   Shaders   Render States   Texture States   Other State			
Event	Pushbuffer	Size	Attributes
BlockOnObject			
Clear	Clear(D3DCLEAR_TARGET   D3DCLEAR_ZBUFFER   D3DCLEAR_STENCIL)	28	
RunPushBuffer			
DrawVerticesUP	D3DRS_PSCOMBINERCOUNT	8	Redundant
	D3DRS_PSRGBINPUTS*	36	Redundant
	D3DRS_PSRGBOUTPUTS*	36	Redundant
	D3DRS_PSALPHAINPUTS*	36	Redundant
	D3DRS_PSALPHAOUTPUTS*	36	Redundant
	LazySetShaderStageProgram	8	Redundant
	SetVertexShaderConstant	44	
	SetVertexShader/SelectVertexShader	208	
	LazySetSpecFogCombiner	8	Redundant
	D3DRS_PSFINALCOMBINERINPUTSABCD	8	
	D3DRS_PSFINALCOMBINERINPUTSEFG	4	
	LazySetState/SetVertexShaderInput	100	
	Jump	4	
	D3DRS_CULLMODE	8	
	D3DRS_ALPHABLENDENABLE	532	
	SetVertexShaderConstant	76	
	SetVertexShader/SelectVertexShader	136	
	CommonSetViewport	52	Redundant
	SetVertexShader/SelectVertexShader	8	Redundant
	D3DRS_PSCOMBINERCOUNT	8	
	D3DRS_PSRGBINPUTS*	36	
	D3DRS_PSRGBOUTPUTS*	36	
	D3DRS_PSALPHAINPUTS*	36	

Fig. 18

468 ↘

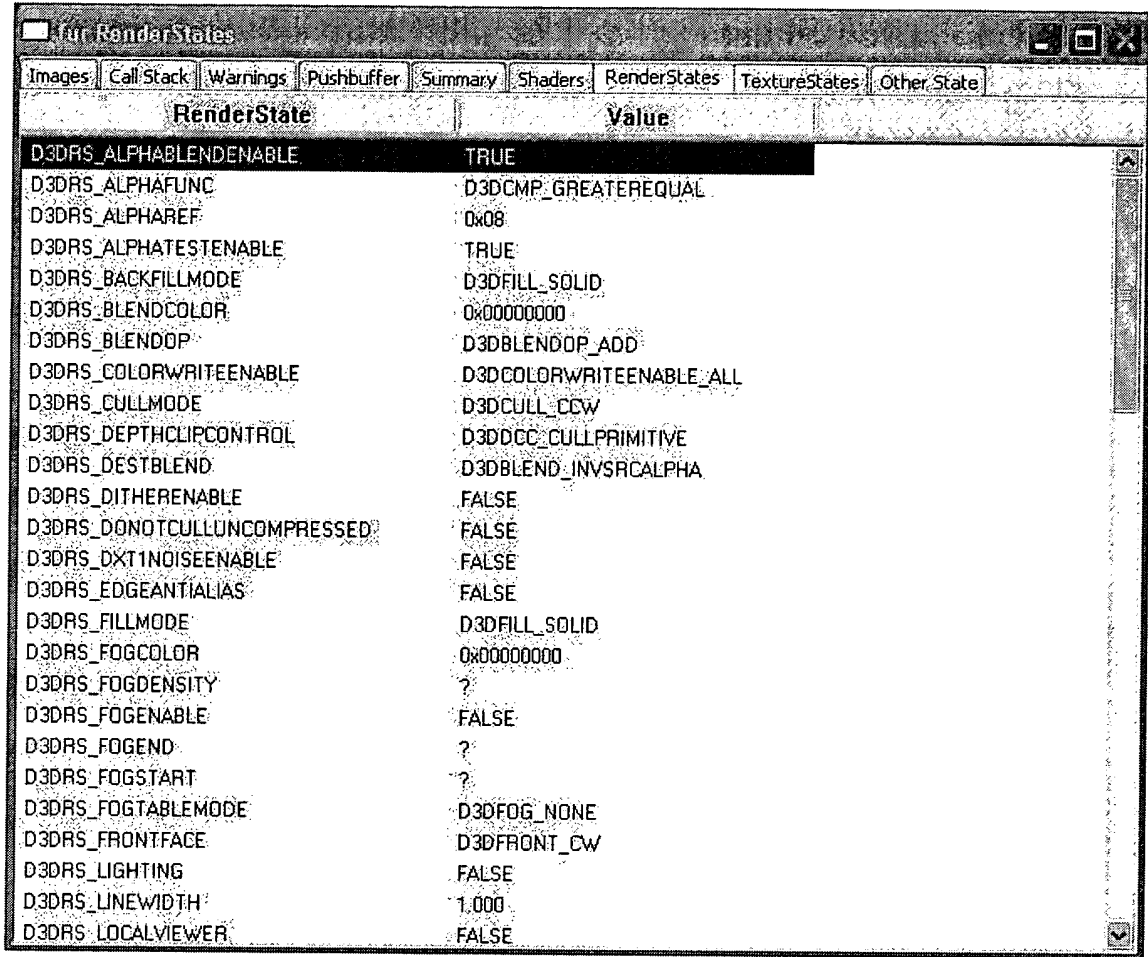
Summary	Value
<b>Timing Data Summary</b>	
Total CPU Time	11,437,802 ns
Total GPU Time	11,280,032 ns
Approximate Framerate	87.43 fps
<b>Display Format</b>	
D3DFMT_LIN_A8R8G8B8	640 x 480
<b>State changes</b>	
Textures	67
Vertex buffers	54
Palettes	0
Color buffers	1
Z buffers	0
Vertex shader programs	20
Vertex shader constants	145
Fences	13
KickOffs	24
Jumps	0
<b>Vertex data types</b>	
D3DVSDT_FLOAT2	101
D3DVSDT_FLOAT3	115
D3DVSDT_D3DCOLOR	1
<b>Memory usage</b>	<b>3,768,320 bytes</b>

*Fig. 19*



*Fig. 20*

480 ↘

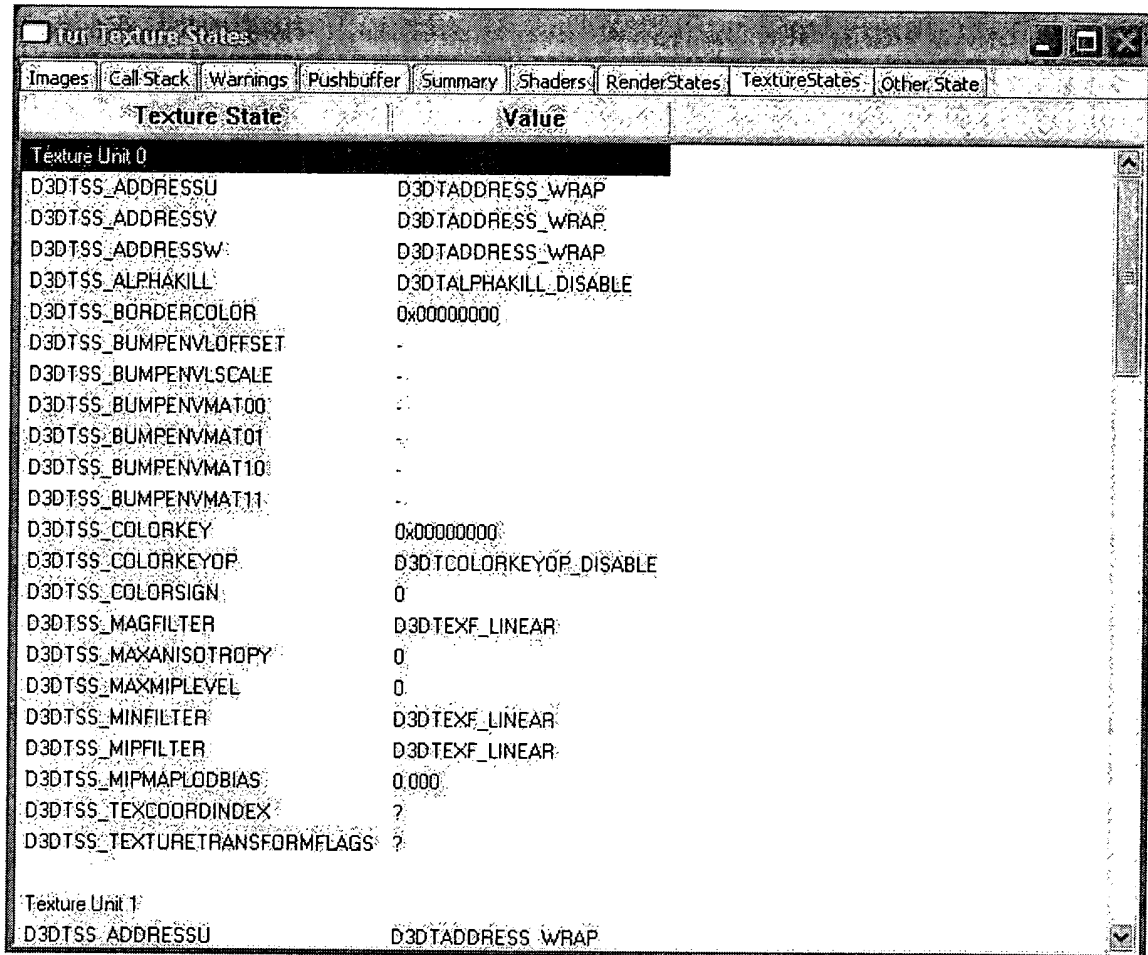


The screenshot shows a window titled "RenderStates" with a tabbed interface. The "RenderStates" tab is selected. The window displays a list of render state variables and their current values. The variables are listed in the "RenderState" column, and their values are in the "Value" column. The first row, "D3DRS\_ALPHABLENDENABLE", is highlighted in black with the value "TRUE".

RenderState	Value
D3DRS_ALPHABLENDENABLE	TRUE
D3DRS_ALPHAFUNC	D3DCMP_GREATEREQUAL
D3DRS_ALPHAREF	0x08
D3DRS_ALPHATESTENABLE	TRUE
D3DRS_BACKFILLMODE	D3DFILL_SOLID
D3DRS_BLENDCOLOR	0x00000000
D3DRS_BLENDOP	D3DBLENDOP_ADD
D3DRS_COLORWRITEENABLE	D3DCOLORWRITEENABLE_ALL
D3DRS_CULLMODE	D3DCULL_CW
D3DRS_DEPTHCLIPCONTROL	D3DDCC_CULLPRIMITIVE
D3DRS_DESTBLEND	D3DBLEND_INVSRCALPHA
D3DRS_DITHERENABLE	FALSE
D3DRS_DONOTCULLUNCOMPRESSED	FALSE
D3DRS_DXT1NOISEENABLE	FALSE
D3DRS_EDGEANTIALIAS	FALSE
D3DRS_FILLMODE	D3DFILL_SOLID
D3DRS_FOGCOLOR	0x00000000
D3DRS_FOGDENSITY	?
D3DRS_FOGENABLE	FALSE
D3DRS_FOGEND	?
D3DRS_FOGSTART	?
D3DRS_FOGTABLEMODE	D3DFOG_NONE
D3DRS_FRONTFACE	D3DFRONT_CW
D3DRS_LIGHTING	FALSE
D3DRS_LINEWIDTH	1.000
D3DRS_LOCALVIEWER	FALSE

*Fig. 21*

484 ↘



The screenshot shows a window titled 'Texture States' with a tabbed interface. The 'TextureStates' tab is selected. The window displays a table of texture states for two texture units. The table has two columns: 'Texture State' and 'Value'.

Texture State	Value
<b>Texture Unit 0</b>	
D3DTSS_ADDRESSU	D3DADDRESS_WRAP
D3DTSS_ADDRESSV	D3DADDRESS_WRAP
D3DTSS_ADDRESSW	D3DADDRESS_WRAP
D3DTSS_ALPHAKILL	D3DTALPHAKILL_DISABLE
D3DTSS_BORDERCOLOR	0x00000000
D3DTSS_BUMPENVLOFFSET	-
D3DTSS_BUMPENVLSCALE	-
D3DTSS_BUMPENVMAT00	-
D3DTSS_BUMPENVMAT01	-
D3DTSS_BUMPENVMAT10	-
D3DTSS_BUMPENVMAT11	-
D3DTSS_COLORKEY	0x00000000
D3DTSS_COLORKEYOP	D3DCOLORKEYOP_DISABLE
D3DTSS_COLORSIGN	0
D3DTSS_MAGFILTER	D3DTEXF_LINEAR
D3DTSS_MAXANISOTROPY	0
D3DTSS_MAXMIPLEVEL	0
D3DTSS_MINFILTER	D3DTEXF_LINEAR
D3DTSS_MIPFILTER	D3DTEXF_LINEAR
D3DTSS_MIPMAPLODBIAS	0.000
D3DTSS_TEXCOORDINDEX	?
D3DTSS_TEXTURETRANSFORMFLAGS	?
<b>Texture Unit 1</b>	
D3DTSS_ADDRESSU	D3DADDRESS_WRAP

*Fig. 22*

488 ↘

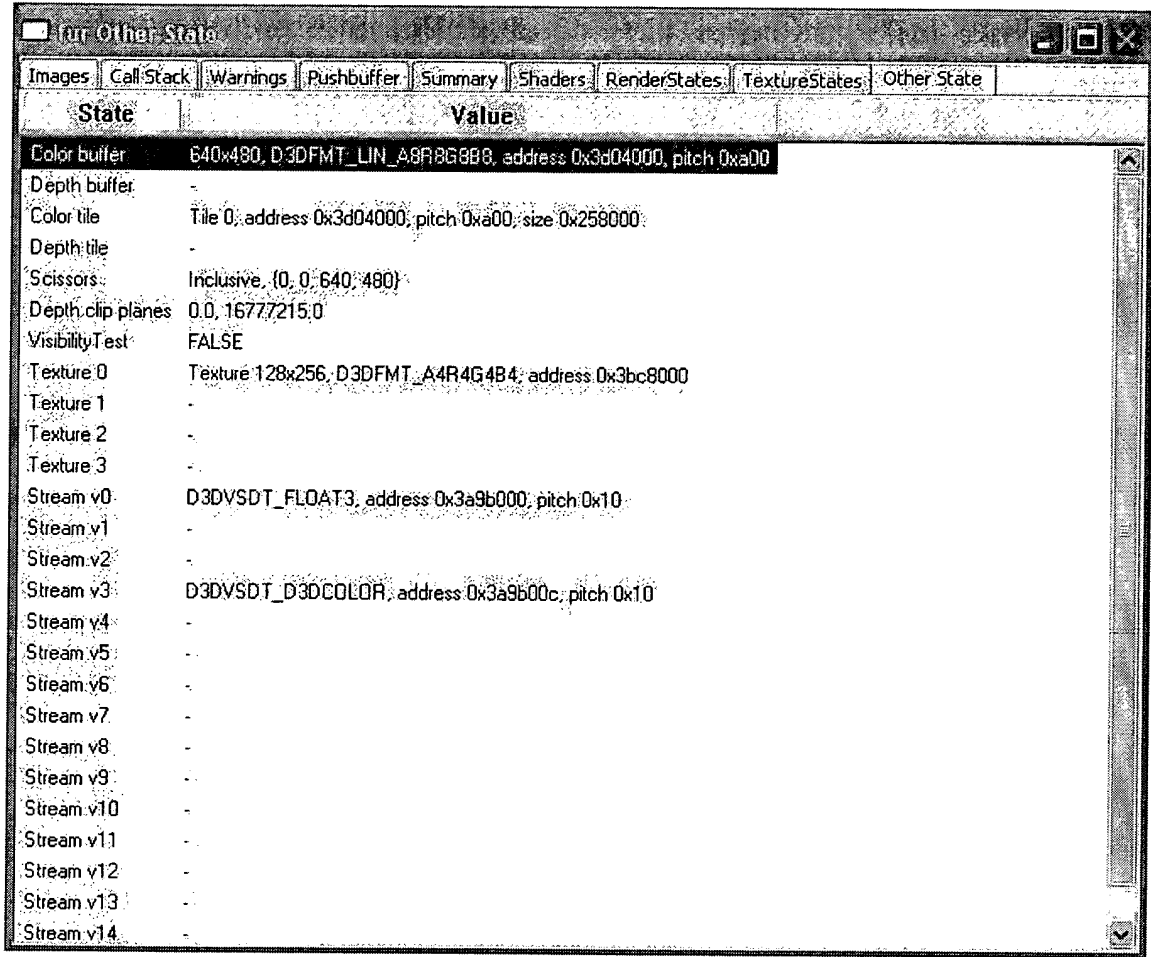


Fig. 23

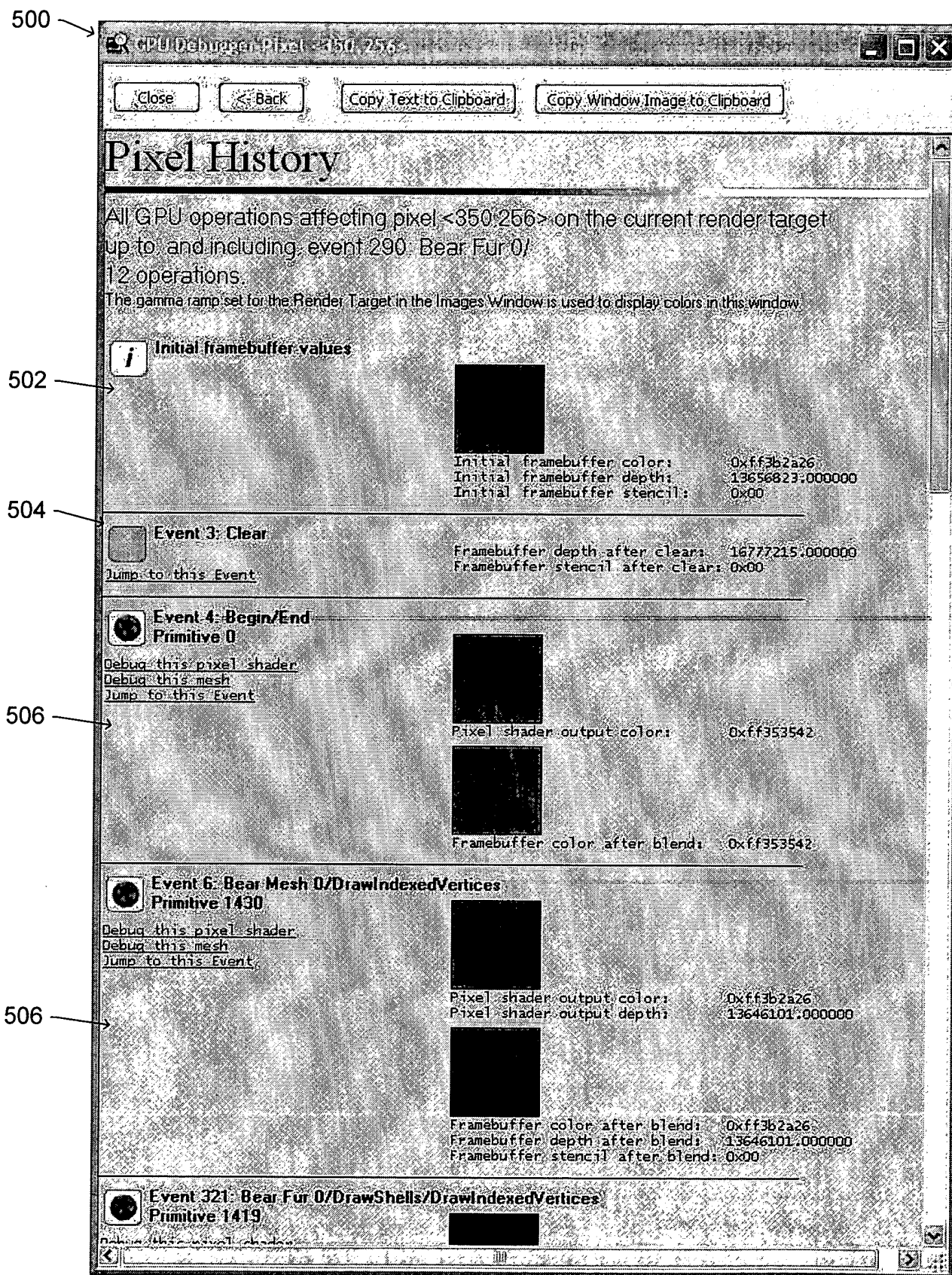
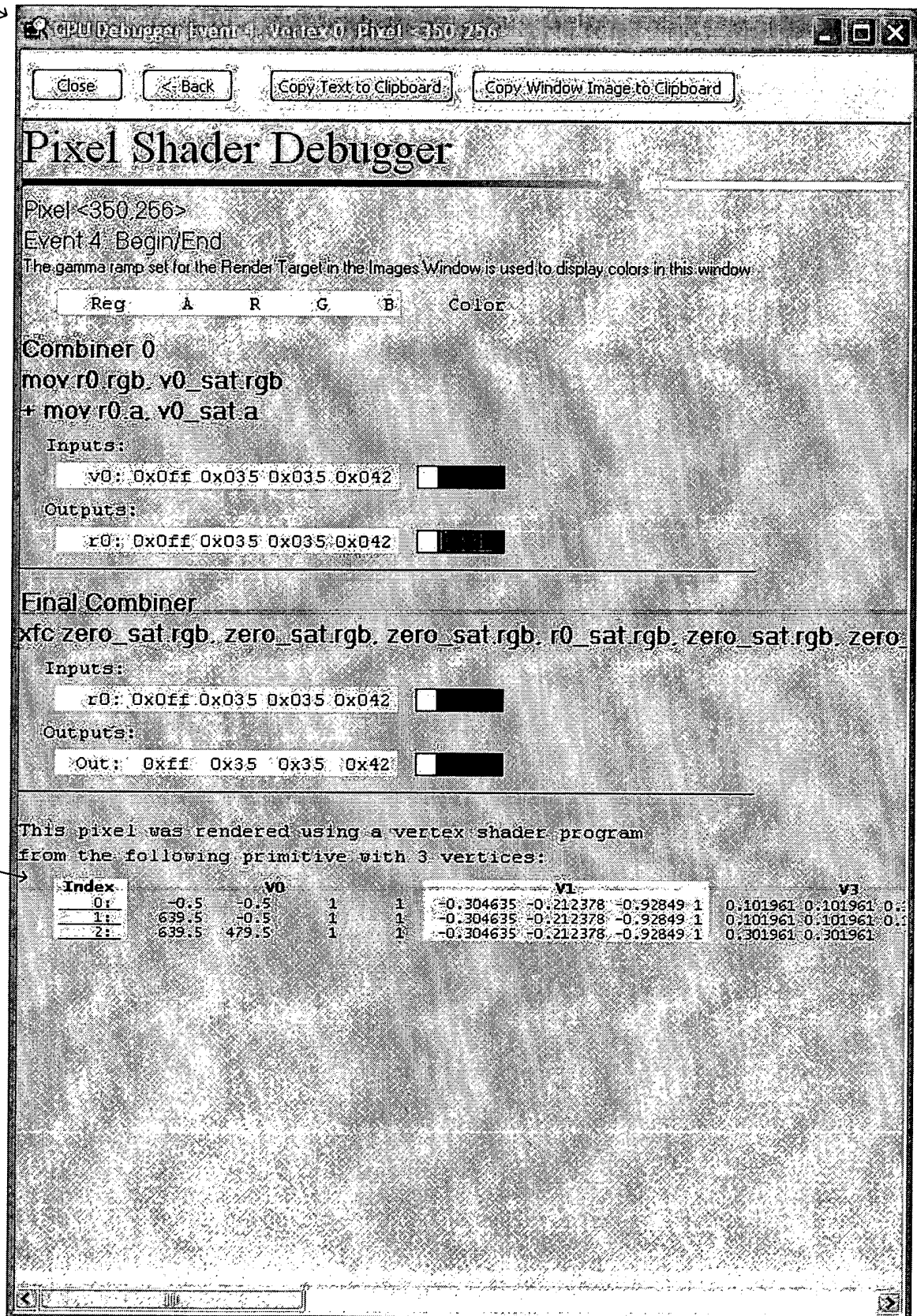


Fig. 24



520 →



522 →

Fig. 25



540 ↘

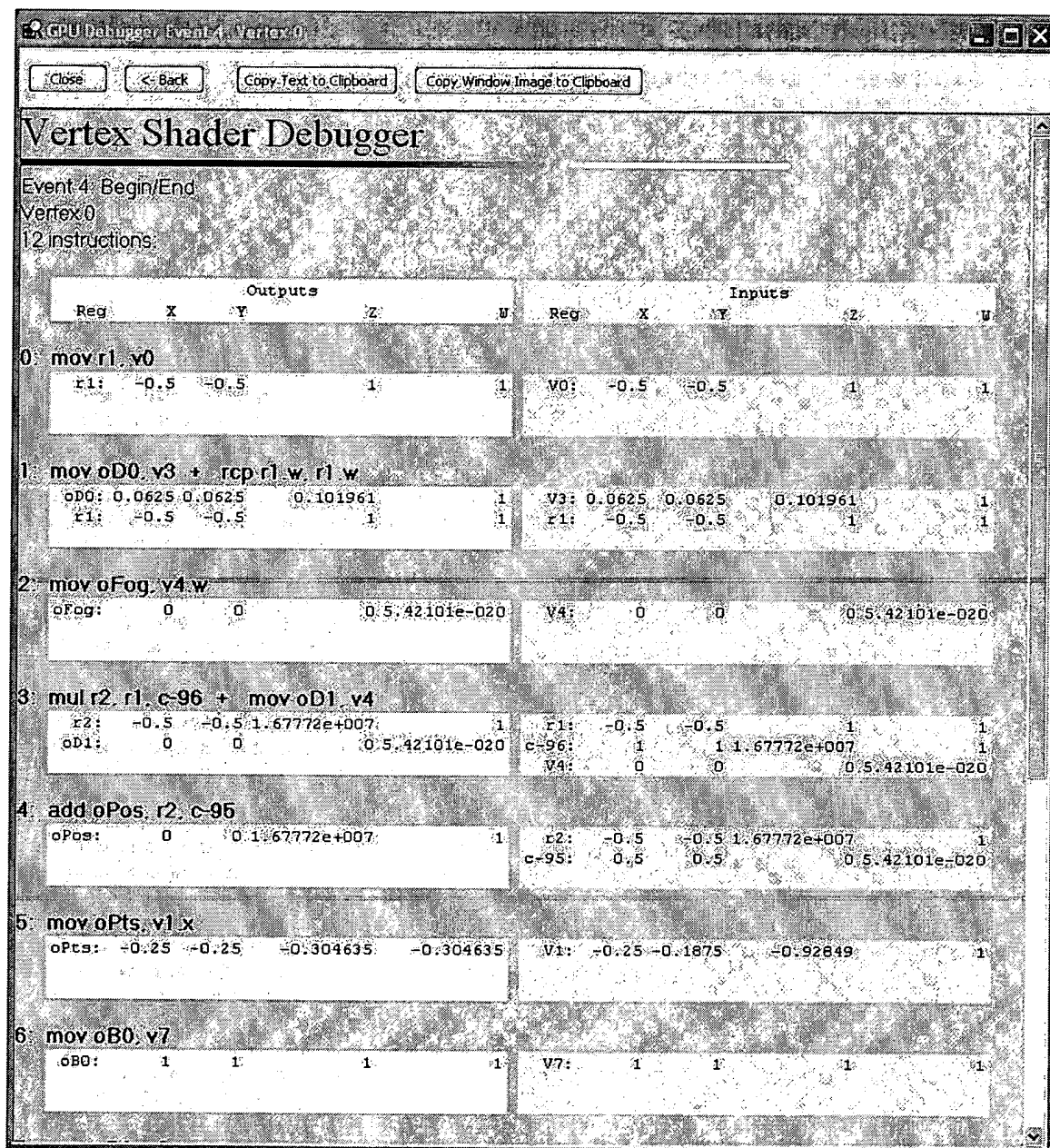


Fig. 26

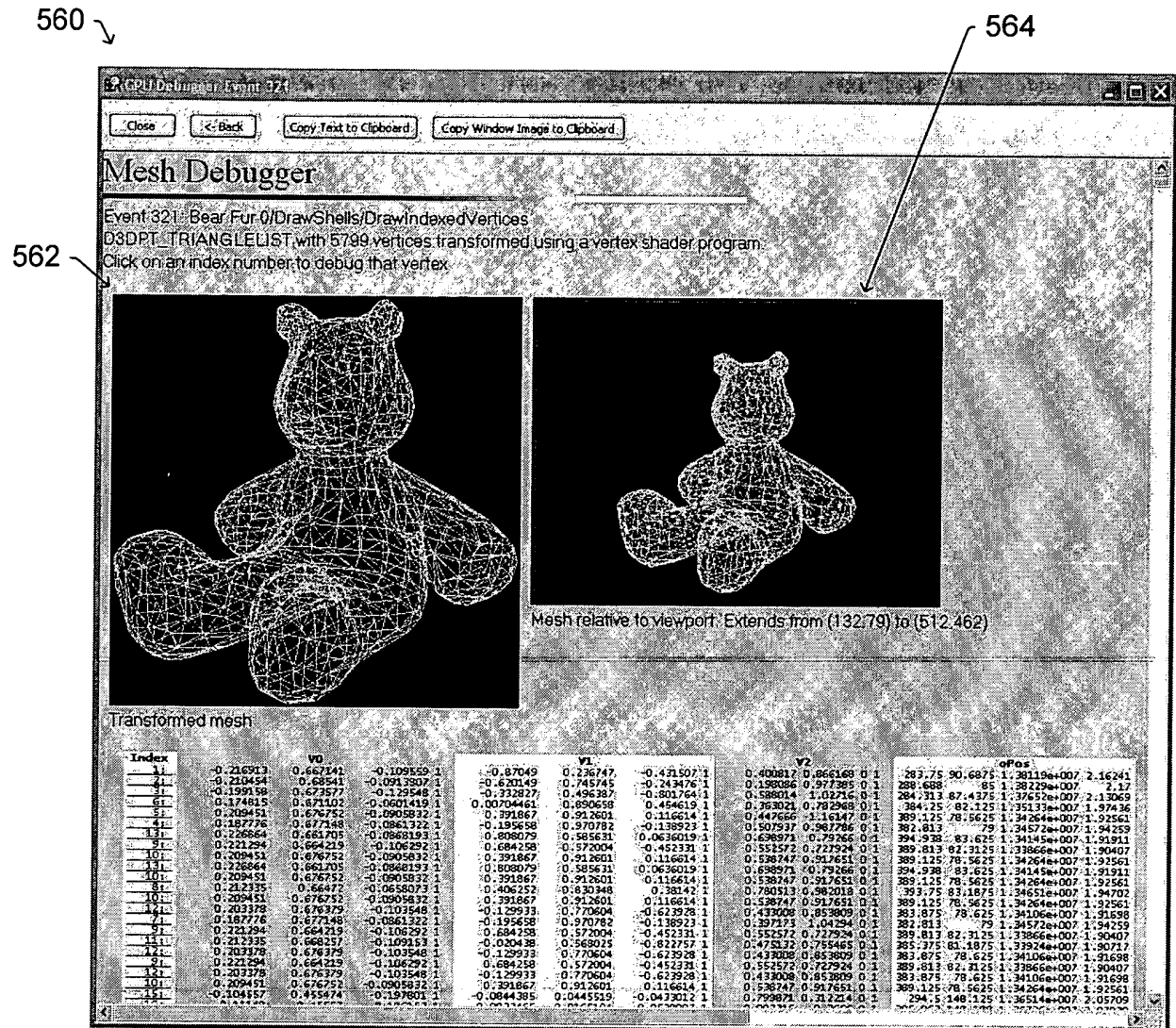


Fig. 27

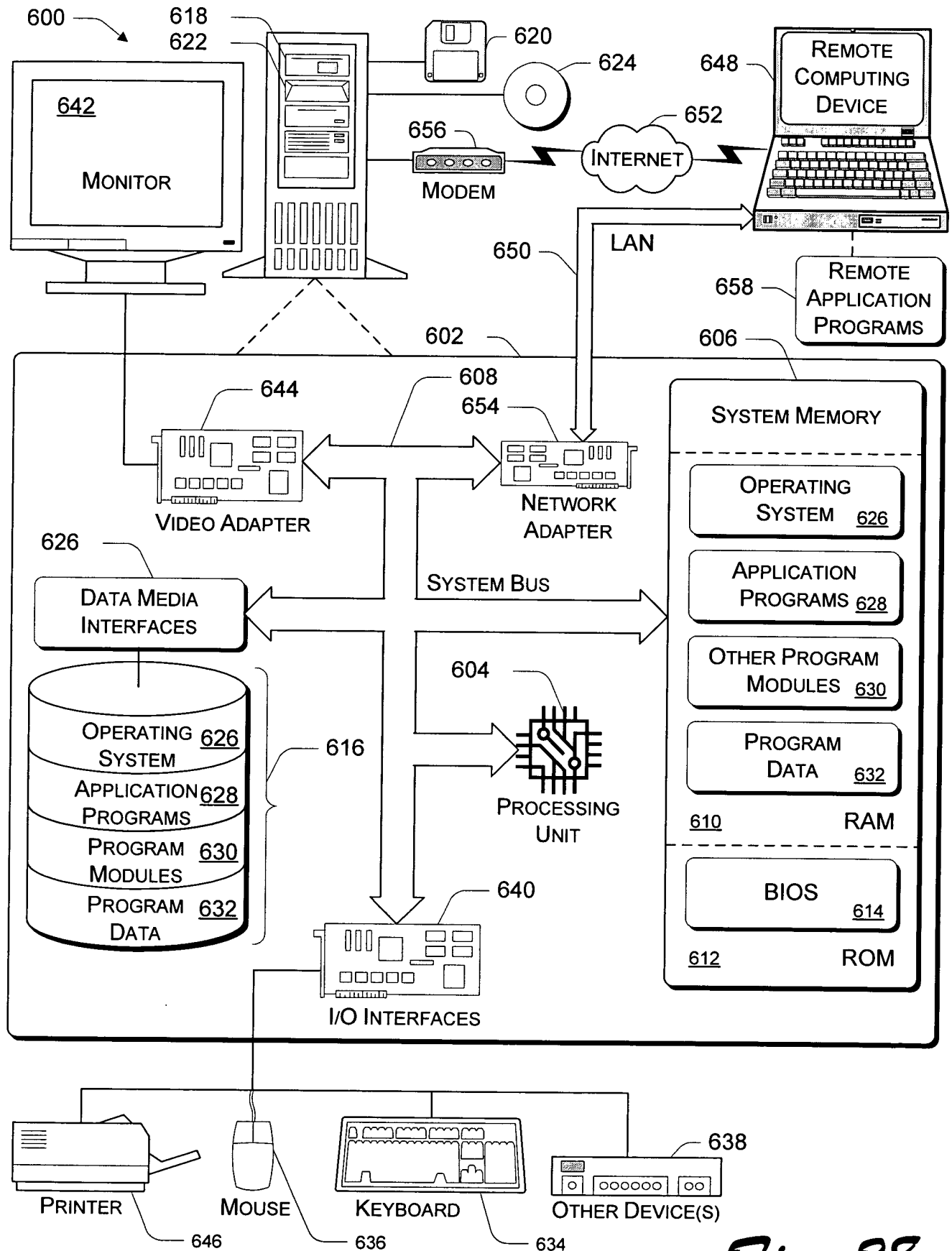


Fig. 28